Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-81. (Cancelled).

82. (New) An optical element, comprising:

a polarization-modulating optical element comprising an optically active crystal having an optical axis, the polarization-modulating optical element having a thickness profile that, as measured in the direction of the optical axis, is variable,

wherein the polarization-modulating optical element is configured to transform an entering light bundle with a first linear polarization distribution into an exiting light bundle with a second linear polarization distribution different from the first linear polarization distribution, and the second linear polarization distribution is an approximately tangential polarization distribution or an approximately radial polarization distribution.

83. (New) The optical element of claim 82, wherein:

when a first linearly polarized light ray passes through the optical element, a plane of oscillation of the first linearly polarized light ray is rotated by a first angle; and

when a second linearly polarized light ray passes through the optical element, a plane of oscillation of the second linearly polarized light ray is rotated by a second angle different from the first angle.

84. (New) The optical element of claim 82, wherein the optically active crystal comprises quartz, TeO_2 or $AgGaS_2$.

85. (New) The optical element of claim 82, wherein the polarization-modulating optical element has an element axis oriented substantially in the direction of the optical axis of the optically active crystal, and the thickness profile in relation to the element axis has a variation that depends only on an azimuth angle θ, where θ is measured from a reference axis that runs perpendicular to the element axis and intersects the element axis.

86. (New) The optical element of claim 85, wherein the thickness profile has a constant value along a radius that is oriented perpendicularly to the element axis and at the angle θ relative to the reference axis.

87. (New) The optical element of claim 85, wherein an azimuthal section of the thickness profile in a range of azimuth angles $10° < \theta < 350°$ and at a constant distance r from the element axis is a linear function of the azimuth angle θ, and the azimuthal section has a slope m conforming approximately to the expression $|m| = \frac{180°}{\alpha \pi r}$, with α representing the specific rotation of the optically active crystal.

88. (New) The optical element of claim 87, wherein the azimuthal section has a substantially jump-like increase of $360°/\alpha$ at the azimuth angle $\theta=0°$.

89. (New) The optical element of claim 85, wherein an azimuthal section of the thickness profile in a range of azimuth angles $10° < \theta < 170°$ and $190° < \theta < 350°$ at a constant distance r from the element axis is a linear function of the azimuth angle θ, wherein this azimuthal section has a slope m conforming approximately to the expression $|m| = \frac{180°}{\alpha \pi r}$, with α representing the specific rotation of the optically active crystal.

90. (New) The optical element of claim 89, wherein the azimuthal section has a substantially jump-like increase of $180°/\alpha$ at the azimuth angles $\theta=0°$ and $\theta=180°$.

91. (New) The optical element of claim 85, wherein an azimuthal section of the thickness profile at a constant distance r from the element axis and in a first azimuth angle range of $10° < \theta < 170°$ is a linear function of the azimuth angle θ with a first slope m, while in a second azimuth angle range of $190° < \theta < 350°$, the azimuthal section is a linear function of the azimuth angle θ with a second slope n, wherein the slopes m and n have the same absolute magnitude but opposite signs, and wherein the magnitude of the slopes m and n conforms to the expression $|m| = |n| = \frac{180°}{\alpha \pi r}$ with α representing the specific rotation of the optically active crystal.

92. (New) The optical element of claim 82, wherein the polarization-modulating optical element comprises at least two planar-parallel portions of different thickness or different optical effective thickness.

93. (New) The optical element of claim 92, wherein the at least two planar-parallel portions are configured as sectors of a circle, or as hexagonal, square, rectangular, or trapeze-shaped raster elements and/or comprise at least a cuvette comprising an optically active or optically inactive liquid.

94. (New) The optical element of claim 92, wherein a first pair of plan-parallel portions are arranged on opposite sides of a central element axis of the polarization-modulating optical element, a second pair of plan-parallel portions are arranged on opposite sides of the element axis and circumferentially displaced around the element axis with respect to the first pair of plan-parallel portions, and each of the first portions has a thickness or optical effective thickness different from a thickness or optical effective thickness of each of the second portions.

95. (New) The optical element of claim 94, wherein, when linearly polarized light passes through the optical element, a plane of oscillation of the linearly polarized light passing is rotated by a first angle of rotation β_1 within at least one of the first plan-parallel portions and by a second angle of rotation β_2 within at least one of the second plan-parallel portions, where

β_1 and β_2 are approximately conforming to the expression $|\beta_2-\beta_1|=(2n+1)\cdot 90°$, with n representing an integer.

96. (New) The optical element of claim 95, wherein β_1 and β_2 are approximately conforming to the expressions $\beta_1=90°+p\cdot 180°$, with p representing an integer, and $\beta_2=q\cdot 180°$, with q representing an integer other than zero.

97. (New) The optical element of claim 94, wherein the second pair of plan-parallel portions is circumferentially displaced around the element axis with respect to first pair of plan-parallel portions by approximately 90°.

98. (New) The optical element of claim 94, wherein the first pair of plan-parallel portions and said second pair of plan-parallel portions are arranged on opposite sides of a central opening or a central obscuration of the polarization-modulating optical element.

99. (New) The optical element of claim 94, wherein adjacent portions of the first and second pairs are spaced apart from each other by regions being opaque or not optically active to linearly polarized light entering the polarization-modulating optical element.

100. (New) The optical element of claim 94, wherein the portions of the first and second pair are held together by a mounting.

101. (New) The optical element of claim 100, wherein the mounting is opaque or not optically active to linearly polarized light entering the polarization-modulating optical element.

102. (New) The optical element of claim 100, wherein the mounting has a substantially spoke-wheel shape.

103. (New) The optical element of claim 102, further comprising:

a first group of substantially planar-parallel portions; and

a second group of substantially planar-parallel portions,

wherein:

when linearly polarized light passes through the optical element, a plane of oscillation of the linearly polarized light is rotated by a first angle of rotation β_1 by the first group of substantially planar-parallel portions,

when linearly polarized light passes through the optical element, a plane of oscillation of the linearly polarized light is rotated by a second angle of rotation β_2 by the second group of substantially planar-parallel portions, and

β_1 and β_2 are approximately conforming to the expression $|\beta_2-\beta_1|=(2n+1)\cdot 90°$, with n representing an integer.

104. (New) The optical element of claim 103, wherein β_1 and β_2 are approximately conforming to the expressions $\beta_1=90°+p\cdot 180°$, with p representing an integer, and $\beta_2=q\cdot 180°$, with q representing an integer other than zero.

105. (New) The optical element of claim 82, wherein the thickness profile or profile of effective optical thickness has a continuous shape.

106. (New) The optical element of claim 82, further comprising an element diameter and a minimal thickness, wherein the minimal thickness of the element is at least equal to 0.002 times the diameter of the element.

107. (New) The optical element of claim 82, wherein the thickness profile has a minimal thickness $d_{min} = N\cdot\frac{90°}{\alpha}$, with α representing the specific rotation of the optically active crystal and N representing a positive integer.

108. (New) The optical element of claim 82, wherein the polarization-modulating optical element has a central opening or a central obscuration.

109. (New) The optical element of claim 82, wherein the entering light bundle consists of a multitude of light rays with an angle distribution relative to the optical axis of the optically active crystal, and the angle distribution has a maximum angle of incidence not exceeding 100 mrad.

110. (New) An optical arrangement, comprising:

the polarization-modulating optical element according of claim 82; and

a second polarization-modulating optical element arranged so that, when light passes through the optical arrangement, the light can pass through the first and second polarization-modulating elements.

111. (New) The optical arrangement of claim 110, wherein the second polarization-modulating optical element comprises a polarization-modulating optical element in accordance with claim 82.

112. (New) The optical arrangement of claim 110, wherein the second polarization-modulating optical element comprises a planar-parallel plate of an optically active crystal and/or a cuvette with optically active or optically inactive liquid.

113. (New) The optical arrangement of claim 110, wherein the second polarization-modulating optical element comprises a rotator made of two half-wavelength plates that are rotated by 45° relative to each other.

114. (New) The optical arrangement of claim 110, wherein:

the first polarization-modulating optical element has an element axis in reference to which the thickness profile has a variation that depends only on an azimuth angle θ, wherein the azimuth angle θ is measured from a reference axis that is oriented perpendicular to the element axis and intersects the element axis;

the thickness profile in a first azimuth angle range of $10° < \theta < 170°$ is a linear function of the azimuth angle θ with a first slope m, while in a second azimuth angle range of $190° < \theta < 350°$ the azimuthal section is a linear function of the azimuth angle θ with a second

slope n, wherein the slopes m and n have the same absolute magnitude but opposite signs; and

the second polarization-modulating optical element comprises a planar-parallel plate which is configured as a half-wavelength plate for a half-space that covers an azimuth-angle range of 180°.

115. (New) The optical arrangement of claim 110, wherein the second polarization-modulating optical element causes a 90°-rotation of the oscillation plane of a linearly polarized light ray passing through the optical arrangement.

116. (New) The optical arrangement of claim 110, further comprising a compensation plate in the light path of the optical system, the compensation plate having a thickness profile configured to substantially compensate the angle deviations of transmitted radiation which are caused by the first polarization-modulating optical element.

117. (New) A system, comprising:
an illumination system;
a projection objective; and
the optical element of claim 82 in the illumination system,
wherein the system is a microlithography optical system.

118. (New) A system, comprising:
an illumination system;
a projection objective; and
the optical arrangement of claim 110 in the illumination system,
wherein the system is a microlithography optical system.

119. (New) The system of claim 117, further comprising:
a substrate; and
an immersion medium with a refractive index different from air is between the substrate and an optical element nearest to the substrate.

120. (New) A method, comprising manufacturing a micro-structured semiconductor component using a system in accordance with claim 117.